

**STUDENTS WORKLOAD AND COURSE DESCRIPTION For PhD. AgSE IN LIVESTOCK SCIENCE
AND SUSTAINABLE ENVIRONMENT PROGRAMME**

ADVANCES IN RESEARCH METHODOLOGY FOR LIVESTOCK SCIENCE					
Module code	Student workload	Credits	Semester	Frequency	Duration
APL 901	210 hours	7.0 ECTS	First Semester	Each First Semester	15 Weeks
1	Types of courses a) Lectures b) Class work c) Practical	Contact hours 75 hours	Independent study 135 hours	Class size Avg of 6 (Max 15)	
2	Prerequisites for participation a) Participation in the course is compulsory for all students admitted for PhD.AgSE Livestock Science and Sustainable Environment b) Participation is subject to confirmation of student's registration for the course				
3	Learning outcomes 1)The students will be able to comprehend and understand scientific experiments and analysis 2) To be able to understand research process and scientific methods as applied in agricultural research 3) Understand experimental designs and be able to apply the appropriate design under field and Laboratory conditions. 4) Understand methods of collecting data, field organization, and analysis of data				
4	Subject aims The aim of the course is for students to be able to set up hypothesis, use appropriate designs, analyse and to interpret the results. Course Contents Basic concepts of research, Planning and organization of experiments for data acquisition and analysis. Type of research methods, experimental designs, equipment and principles underlying their uses. Scientific periodicals and literature related to the subject. Form and style of writing research papers, review articles, research reports and thesis. Selection of research problem and preparation and submission of research projects. Interpretation and evaluation of research data, considerations and requirements for setting up a research laboratory.				
5	Teaching methods Lectures, sharing of materials via learning tools, individual presentations and discussions				

6	<p>Assessment methods</p> <p>Individual Presentations, Continuous Assessment, Written end-of-the-semester examination</p> <p>This course will be graded as follows: Group Assignments 10%, Test(s) 20% Final Examination 70%</p>
7	<p>This module is used in the following degree programmes as well</p> <p>Masters of Agriculture in the College of Plant Science and Crop Production, FEDERAL University of Agriculture, Abeokuta.</p>
8	<p>Responsibility for module</p> <ul style="list-style-type: none"> • Dr Durosaro Samuel Prof. Mike Ozoje
9	<p>Other information</p> <p>Suggested References</p> <p style="text-align: center;"><u>Biostatistics for Animal Science</u></p> <p>By M Kaps, University of Zagreb, Croatia, W Lamberson, University of Missouri, USA</p> <p>Statistical Procedures for Agricultural Research, 2nd Edition. Kwanchai A. Gomez, Arturo A. Gomez. ISBN: 978-0-471-87092-0. Feb 1984. 704 pages</p> <p>-Applied Statistics for Scientific Studies. T. A. T. Wahua. Afrika Link Publishers, University of Ibadan , Nigeria. ISBN: 978-2915-15-7</p> <p>Note:</p> <p>This course is a 3-unit course based on the credit system in use in Nigeria. It is delivered through 45 hours of class lectures and demonstrations. Students are however, expected to devote a total of 210 hours of learning to the course, including participation in 75 hours of course lectures and practical and 135 hours of self-study (assigned reading, personal studies, assignments, group work and hands-on practice using statistical software to analyse data). Hence, the course is of 7.0 ECTS credit equivalent.</p>

Metabolism of Protein and Nucleic Acid in Livestock					
Module code	Student workload	Credits	Semester	Frequency	Duration
APL 902	180 hours	3.0 ECTS	Second Semester	One time in each second Semester	15 Weeks
1	Types of courses		Contact hours	Independent study	Class size
	a) Lectures		45 hours	135 hours	Avg of 6 (Max 15)
	b) Seminars				

	c) Practicals			
2	Prerequisites for participation a) Participation in the course is compulsory for all students admitted for PhD.AgSE Livestock Science and Sustainable Environment b) Participation is subject to confirmation of student's registration for the course			
3	Learning outcomes The course is to enable the students to: a) Understand the function of amino acids and nucleic acid and their metabolism b) Understand the recent trends and application in research using livestock species			
4	Subject aims/Course Contents Metabolism of protein and nucleic acids, Amino acid precursors and functions of nucleic acids in protein structure. Recent trends in protein and nucleic acid research. Special techniques for protein and nucleic acid determination and identification.			
5	Teaching methods Lectures, Practical, individual presentations and discussions			
6	Assessment methods Teaching and learning will be conducted through weekly lectures, assigned readings and discussion seminars. Individual Presentations, Continuous Assessment, Summative Assessment, Written end-of-the-semester examination This course will be graded as follows: Individual Presentation 5%, Practicals 15%, Test(s) 20% Final Examination 60%			
7	This module is used in the following degree programmes as well The module is available for Graduate student in Monogastric option in Animal Nutrition			
8	Responsibility for module · Prof O. O. Oluwatosin Dr. A. O. Oso			
9	Other information Suggested References <u>Biochemistry of the amino acids By Alton Meister Book ISBN: 9780323161473, Imprint: Academic Press Published Date: 1st January 1965 Page Count: 629</u> Amino Acid Metabolism, Third Edition, By David A Bender, Print ISBN:9780470661512 Online ISBN:9781118357514 DOI:10.1002/9781118357514, Copyright © 2012 John Wiley & Sons, Ltd Important Note:			

This course is a 3-unit course based on the credit system in use in Nigeria. It is delivered through 45 hours of class lectures and demonstrations. Students are however, expected to devote a total of 210 hours of learning to the course, including participation in 75 hours of course lectures and practicals and 135 hours of self-study (assigned reading, personal studies, assignments, group work and hands-on practice using statistical software to analyse data). Hence, the course is of 7.0 ECTS credit equivalent.

Advances in Biotechnology					
Module code	Student workload	Credits	Semester	Frequency	Duration
APL 903	120 hours	2.0 ECTS	First Semester	One time in each second Semester	15 Weeks
1	Types of courses a) Lectures b) Seminars c) Practical	Contact hours 45 hours	Independent study 120 hours	Class size Avg of 6 (Max 15)	
2	Prerequisites for participation a) Participation in the course is compulsory for all students admitted for PhD.AgSE Livestock Science and Sustainable Environment b) Participation is subject to confirmation of student's registration for the course				
3	Learning outcomes The course is to enable the students to: a) Understand the function of amino acids and nucleic acid and their metabolism b) Understand the recent trends and application in research using livestock species				
4	Subject aims/Course Contents Advance structure of Animal cell, tissue culture practice and techniques. Maturation of oocytes, oocytes fusion (in vitro), cloning genetic engineering, embryo transfer (intra and inter specie), DNA sequences, polymorphism in genes, blood groups dynamics, Gene description, genetic markers. Linkage, mapping and mapping distances. Single cell meiosis, sex chromosomes and sex likages				
5	Teaching methods Lectures, Practical, individual presentations and discussions				
6	Assessment methods Teaching and learning will be conducted through weekly lectures, assigned readings and discussion seminars. Individual Presentations, Continuous Assessment, Summative Assessment, Written end-of-				

	<p>the-semester examination</p> <p>This course will be graded as follows: Individual Presentation 5%, Practicals 15%, Test(s) 20% Final Examination 60%</p>
7	<p>This module is used in the following degree programmes as well</p> <p>The module is available for Graduate student in Animal Breeding and Genetics in the University</p>
8	<p>Responsibility for module</p> <ul style="list-style-type: none"> • Prof A, O. Adebambo Prof. J. O. Daramola
9	<p>Other information</p> <p>Suggested References</p> <p>Textbook of Animal Biotechnology by B Singh, S K Gautam and M S Chauhan</p> <p>Animal biotechnology and animal welfare by M. Gjerris, A. Olsson & P. Sandøe</p> <p>www.cls.casa.colostate.edu/TransgenicCrops/teacherlinks</p> <p>www.hpc.unm.edu/~aroberts/main/top5%25.htm</p> <p>www.isaaa.org</p> <p>www.ciat.cgiar.org/biotechnology/cbn/gines_mera_fund.htm</p> <p>www.scidev.net/en/agriculture-and-environment/agri-biotech/links/publications-andinformation-services</p> <p>www.biotechinstitute.org/programs/t_leader_program.html</p> <p>www.sci-ed-ga.org/modules/dna/analogies.html</p> <p>www.accessexcellence.org/AE/AEPC/WWC/1993</p> <p>www.atschool.eduweb.co.uk/trinity/bio2.html</p> <p>www.pub.ac.za/resources/teach.html</p> <p>www.bio-link.org/biomaterial.htm</p> <p>www.biotechnology.gov.au/index.cfm?event=object.showContent&objectID=B35A914CDE3D-1A59-79F89FAA26F54E44</p> <p>www.monsanto.com/products/techandsafety/technicalpubs/eduwebsites.asp</p> <p>www.ejbiotechnology.info/content/vol5/issue3/teaching/01/index.html</p> <p>www.ncbiotech.org/resource_center/for_educators/online_teaching_resources.html</p> <p>www.ias.ac.in/currsci/dec252006/1594</p> <p>Important Note:</p> <p>This course is a 3-unit course based on the credit system in use in Nigeria. It is delivered through 45 hours of class lectures and demonstrations. Students are however, expected to devote a total of 210 hours of learning to the course, including participation in 75 hours of course lectures and practicals and 135 hours of self-study (assigned reading, personal studies, assignments, group work and hands-on practice using statistical software to analyse data). Hence, the course is of 7.0 ECTS credit equivalent.</p>

Livestock Science and Sustainability					
Module code	Student workload	Credits	Semester	Frequency	Duration
APL 904	120 hours	2.0 ECTS	First Semester	One time in each second Semester	15 Weeks
1	Types of courses a) Lectures b) Seminars c) Practicals	Contact hours 45 hours	Independent study 120 hours	Class size Avg of 6 (Max 15)	
2	Prerequisites for participation a) Participation in the course is compulsory for all students admitted for PhD.AgSE Livestock Science and Sustainable Environment b) Participation is subject to confirmation of student's registration for the course				
3	Learning outcomes The course is to enable the students to: a) Understand the various impact of livestock science, Animal Interaction and the Life Cycle Assessment b) Identify Measures to improve sustainability				
4	Subject aims/Course Contents Introduction – sustainability and decision making The three aspects of sustainability (environmental, social, economic). The importance of studying how the three aspects of sustainability are related and impact each other. Decision case studies and the importance of stakeholder roles. Decision making in complex situations, when different aspects of sustainability should be considered Environmental sustainability: Animal husbandry and interactions with the environment and impacts on the atmospheric, aquatic and terrestrial environment. Technological opportunities for minimizing negative environmental impacts of animal activities. Natural resource and nutrient flows perspectives of international trade with fodder, animal derived food, live animals and other products related to the animal sector. Methods for assessing environmental impacts and sustainability of different animal production systems or uses, with a main focus on Life Cycle Assessment (LCA). Social sustainability: Social sustainability in a historical perspective and the relation between animal related activities and social sustainability, Mapping: Determining contextually relevant dimensions of social sustainability such as material wellbeing, health, animal welfare, cultural vitality etc., Operationalization: Determination of the level of social sustainability of a given activity at farm, regional or national level, using relevant indicators. Economic sustainability: Definitions of economic sustainability. The concepts of weak and				

	strong sustainability. Differences between sustainability and economic optimization at farm versus societal levels. Measures to increase sustainability (regulatory and market-based). Economic methods to assess sustainability (marginal trade-off, profit maximization, non-market valuation, cost-benefit)
5	Teaching methods Lectures, Practical, individual presentations and discussions
6	Assessment methods Teaching and learning will be conducted through weekly lectures, assigned readings and discussion seminars. Individual Presentations, Continuous Assessment, Summative Assessment, Written end-of-the-semester examination This course will be graded as follows: Individual Presentation 5%, Practicals 15%, Test(s) 20% Final Examination 60%
7	This module is used in the following degree programmes as well The module is not available in any programme in the University
8	Responsibility for module • Prof. O. O. Oluwatosin Dr. O. O. Adeleye
9	Other information Suggested References <u>Sustainable animal production: The challenges and potential developments for professional farming Books Editors A. Aland and F. Madec Published: 2009 Pages: 496</u> eISBN: 978-90-8686-685-4 ISBN: 978-90-8686-099-9 https://doi.org/10.3920/978-90-8686-685-4 Important Note: This course is a 3-unit course based on the credit system in use in Nigeria. It is delivered through 45 hours of class lectures and demonstrations. Students are however, expected to devote a total of 210 hours of learning to the course, including participation in 75 hours of course lectures and practicals and 135 hours of self-study (assigned reading, personal studies, assignments, group work and hands-on practice using statistical software to analyse data). Hence, the course is of 7.0 ECTS credit equivalent.

Module code APL 905	Student workload 180 hours	Credits 3.0 ECTS	Semester Second Semester	Frequency One time in each second Semester	Duration 15 Weeks
1	Types of courses a) Lectures b) Seminars c) Practicals	Contact hours 45 hours	Independent study 180 hours	Class size Avg of 6 (Max 15)	
2	Prerequisites for participation a) Participation in the course is compulsory for all students admitted for PhD.AgSE Livestock Science and Sustainable Environment b) Participation is subject to confirmation of student's registration for the course				
3	Learning outcomes The course is to enable the students to: By the end of this section, you will be able to: Explain the processes of glycolysis Describe the pathway of a pyruvate molecule through the Krebs cycle Explain the transport of electrons through the electron transport chain Describe the process of ATP production through oxidative phosphorylation Summarize the process of gluconeogenesis Explain how energy can be derived from fat Explain the purpose and process of ketogenesis Describe the process of ketone body oxidation Explain the purpose and the process of lipogenesis				
4	Subject aims/Course Contents Metabolism of carbohydrates as it relates to various livestock species. Recent trends in carbohydrate and lipid research. Special techniques for metabolic study relating to carbohydrates and lipids. Control mechanism of CHO and lipid metabolism.				
5	Teaching methods Lectures, Practical, individual presentations and discussions				
6	Assessment methods Teaching and learning will be conducted through weekly lectures, assigned readings and discussion seminars. Individual Presentations, Continuous Assessment, Summative Assessment, Written end-of-the-semester examination				

	This course will be graded as follows: Individual Presentation 5%, Practicals 15%, Test(s) 20% Final Examination 60%
7	This module is used in the following degree programmes as well The module is available in M. Agric programme in the Animal Nutrition Department University
8	Responsibility for module · Dr. A. O. Fafiolu
9	Other information Suggested References <i>Basic Animal Nutrition and Feeding by W. Pond, K. Pond, P. Schoknecht and D. Church Paperback ISBN13: 978-0471215394 5th Edition</i> Applied Animal Nutrition : Feeds and Feeding by Peter R. Cheeke, Hardback ISBN13: 978-0131133310 3rd Edition <u>Basic Animal Nutrition and Feeding, 5th Edition, Wilson G. Pond, David B. Church, Kevin R. Pond, Patricia A. Schoknecht, ISBN: 978-0-471-21539-4</u> Important Note: This course is a 3-unit course based on the credit system in use in Nigeria. It is delivered through 45 hours of class lectures and demonstrations. Students are however, expected to devote a total of 210 hours of learning to the course, including participation in 75 hours of course lectures and practicals and 135 hours of self-study (assigned reading, personal studies, assignments, group work and hands-on practice using statistical software to analyse data). Hence, the course is of 7.0 ECTS credit equivalent.

Research and Academic Integrity						
Module Code 906	APL	Student workload 120 hours	Credits (according to ECTS) 2.0	Semester Second Semester	Frequency Once every academic session by the Second Semester	Duration 15 Weeks
1	Types of courses a) Class Work b) Lectures c) Students' Presentation		Contact hours 45 hours	Independent study 120 hours	Class size Avg of 6 (Max 15)	
2	Prerequisites for participation Participation in the course is compulsory for all students admitted for PhD.AgSE Livestock Science and Sustainable Environment b) Participation is subject to confirmation of student's registration for the course					
3	Learning outcomes After the completion of this course, the Students will: Reflect on the meaning and importance of academic integrity as well as the values associated with it Identify actions which constitute academic dishonesty and how to avoid it Explore how to use the work of others with integrity Develop key study skills which foster academic integrity					
4	Subject aims/Course Contents Common terminologies, Outlines of Academic Integrity, ethics infrastructure, code of conduct, code of ethics, Academic integrity committee, Research ethics committee, data Management. Guideline about Science Research. Guideline about academic writing and publishing. Guideline about academic integrity breaches.					
5	Teaching methods Lectures, practical demonstrations, individual presentations, and discussions					
6	Assessment methods Individual Presentations, Continuous Assessment, Written end-of-the-semester examination Assignments & Presentations (15%), Mid-Semester Tests (15%) and Final Examination					

	(70%)
7	This module is not in used in any programme in the University.
8	<p>Responsibility for module</p> <p>Dr. O. O. Adeleye</p> <p>Dr. A. O. Fafioliu</p> <p>Dr. L. T. Egbeyale</p>
9	<p>Other information</p> <p>1. References</p> <p><u>Handbook of Academic Integrity Editors: Bretag, Tracey (Ed.)</u></p> <p><u>http://www.ou.edu/integrity/resources</u></p> <p><u>https://www.uq.edu.au/integrity/</u></p> <p>2. Important Note</p> <p>This course is a 2-unit course based on the credit system in use in Nigeria. It is delivered through 45 hours of class lectures and demonstrations. Students are however, expected to devote a total of 120 hours of learning to the course, including participation in 45 hours of course lectures and demonstrations, and 120 hours of self-study (assigned reading, personal studies, assignments, group work and hands-on practice using statistical software to analyse data). Hence, the course is of 4.0 ECTS credit equivalent.</p>

Vitamin and Minerals Nutrition and Metabolism in Livestock						
Module Code	APL	Student workload	Credits (according to ECTS)	Semester	Frequency	Duration
907		180 hours	3.0	Second Semester	Once every academic session by the second Semester	15 Weeks
1	Types of courses a) Class Work b) Hands–on Practical c) Students’ Presentation		Contact hours 60 hours	Independent study 180 hours	Class size Avg of 6 (Max 15)	
2	Prerequisites for participation Basic knowledge of Animal Nutrition Science					
3	Learning outcomes At the end of this course, the students should be able to: Explain the forms in which micronutrients are present in feed ingredients; Discuss intake, digestion, absorption, transport and metabolism of vitamins and minerals by livestock Animals; Explain the role of micronutrients in maintaining normal body metabolism and functions as well as in the prevention and treatment of diseases; Apply their knowledge of biochemistry, physiology and other sciences in the understanding of the principles of nutrition with emphasis on micronutrients (vitamins, minerals and other minor components of the Livestock diet).					
4	Subject aims The aim of the module is to: Enable students to understand the metabolism and use of vitamins and minerals in Livestock Science Course Contents Classification and chemistry of vitamins and minerals. Structural, biochemical and other functions of vitamins and minerals in metabolism and physiology of farm animals. Elucidation of practical deficiency symptoms of vitamins and minerals in farm animals. Interrelationships between vitamins and minerals					
5	Teaching methods Lectures; practical demonstrations; presentations and discussions.					

6	<p>Assessment methods</p> <p>Performance in the course will be assessed by a combination of assignments (10%), a Mid Semester Test (15%), a term paper (25%) and a final examination (50%). .</p>
7	<p>This module is used in the following degree programmes as well</p> <p>M. Agric. Monogastric Animal Nutrition</p>
8	<p>Responsibility for module</p> <p>Dr. A. V. Jegede</p> <p>Prof. O. O. Oluwatosin</p>
9	<p>Other information</p> <p>References</p> <p>https://opentextbc.ca/biology/chapter/15-2-nutrition-and-energy-production/</p> <p>2. Important Note</p> <p>This course is a 3-unit course based on the credit system in use in Nigeria. It is delivered through 60 hours of class lectures and demonstrations. Students are however, expected to devote about 180 hours to learning of the course content, including participation in 60 hours of course lectures and demonstrations, and 180 hours of self-study (assigned reading, personal studies, assignments, group work. Hence, the course is of 6.0 ECTS credit equivalent.</p>

Molecular Nutrition					
Course code APL 908	Student work-Load 120 hours	Credits (ECTS) 4.0 ECTs	Semester Second Semester	Frequency Each Second Semester	Duration 15 weeks per semester
1	Types of Courses (a) Classroom lecture (b) Term paper	Contact hours 40 hours	Independent study 120 hours	Class size Avg of 6 (Max 15)	
2	Prerequisites for participation: Registration for the course at the PhD AgSE				
3	Learning outcomes: After successfully completing this course, students should be able to: Explain the biochemical roles of the essential nutrients in metabolism Explain the role of nutrients and other food components in the modulation of gene expression on a global scale (Nutrigenomics and Epigenetics) Evaluate the interaction between food components and genetic factors that influence biochemical pathways and health and susceptibility to disease (Nutrigenetics and Epigenetics). Illustrate how genomics-aided developments can improve the nutritional quality of foods Integrate and generate biochemical and nutritional science knowledge in professional context such as personalised nutrition				
4	Course Contents Methods in Molecular Nutrition Research, Perspectives in postgenomic nutrition research, Cellular Nutrient Homeostasis, Proliferation, and Apoptosis, Roles for Nutrients in Signal Transduction, Gene Expression, and Proteolysis, Glucose regulation of gene expression in mammals, Amino acid-dependent control of transcription in mammalian cells, Fatty acids and gene expression, Roles of RARs and RXRs in mediating the molecular mechanism of action of vitamin A, Regulation of gene expression by biotin, vitamin B6 and vitamin C, Selenium and vitamin E				
5	Teaching methods: (a) Lectures (b) discussions				

	(c) group presentation
6	<p>Assessment methods:</p> <p>(a) The course is evaluated through various combinations of methods including final examinations, term papers oral presentations, individual study and group work</p> <p>(b) This course will be graded as follows: Class Attendance 5%, Assignments, 15%, Test(s) 10% Final Examination 70%</p>
7	This module/course is not used in the any programme(s) in the University:
8	<p>Responsibility for module/course:</p> <p>Dr. A. O. Fafiolu</p> <p>Dr. A. O. Oso</p>
9	<p>Other information e.g. references:</p> <p>Molecular Nutrition By J Zemleni, University of Nebraska-Lincoln, USA, H Daniel, Technical University of Munich, Germany https://www.purdue.edu/hhs/nutr/students/graduate/academics/emphasis-groups/biochemical-molecular-nutrition.html</p> <p>Important Note:</p> <p>This course is a 2-unit course based on the credit system in use in Nigeria. It is delivered through 40 hours of class lectures and demonstrations. Students are however, expected to devote a total of 120 hours of learning to the course, including participation in 40 hours of course lectures and demonstrations, and 120 hours of self-study (assigned reading, personal studies and assignments). Hence, the course is of 4.0 ECTS credit equivalent.</p>

Current Issues in Feed Safety					
Course code	Student work-load	Credits (ECTS)	Semester	Frequency	Duration
APL 909	120 hours	4.0 ECTS	First Semester	One time in each second Semester	15 Weeks
1	Types of Courses	Contact	hours	Independent study	Class size
	a) Classroom lecture b) Term paper		40 hours	120 hours	Avg of 6 (Max 15)

	presentation		
	<p>Prerequisites for participation:</p> <p>2 Basic knowledge of Animal Science</p>		
	<p>Learning outcomes:</p> <p>After successfully completing this course, students should be able to:</p> <p>Increase understanding of food issues faced in disasters</p> <p>Increase understanding of the role of environmental health practitioners in addressing food safety issues</p> <p>Be able to identify key response partners, Increase understanding of the basic elements of food safety</p> <p>Practice and demonstrate basic skills for assessing food safety</p> <p>3 Identify key messages for the public, industry, and response partners</p>		
	<p>Course Contents</p> <p>Current status of knowledge on the impact of animal feed on food safety and on international trade of feed and food. Safety assessment and detection of hazards in animal feed and feed ingredients related to public health. Prevention and control of risks in animal feed associated with public health.</p> <p>4 Identification of relevant areas for further work on animal feed in relation to food safety.</p>		
	<p>5 Teaching methods:</p> <p>a) Lectures</p> <p>b) discussions</p> <p>c) Practicals</p>		
	<p>Assessment methods:</p> <p>(a) The course is evaluated through various combinations of methods including final examinations, term papers, individual study and group work</p> <p>(b) This course will be graded as follows: Class Attendance 5%, Assignments 15%, Test(s) 10% Final Examination 70%</p> <p>6</p>		
7	<p>This module/course is not used in any programme in the University</p>		
	<p>Responsibility for module/course:</p> <p>Dr. O. M. Sogunle</p> <p>8 Dr. A. O. Oni</p>		
	<p>Other information:</p> <p>9 references:</p>		

Important Note:

This course is a 2-unit course based on the credit system in use in Nigeria. It is delivered through 40 hours of class lectures and demonstrations. Students are however, expected to devote about 120 hours to learning of the course content, including participation in 45 hours of course lectures and demonstrations, and 120 hours of self-study (assigned reading, personal studies, assignments and group work) Hence, the course is of 4.0 ECTS credit equivalent.

Topical Research Problems in Livestock Science					
Module code CRP 910	Student workload 120 hours	Credits (according to ECTS) 2.0 ECTS	Semester Second Semester	Frequency One time in each semester and per session	Duration 15 Weeks
1	Types of courses a) Class Work b) Seminars c) Students' Presentation	Contact hours 40 hours	Independent study 120 hours	Class size Avg of 6 (Max 15)	
2	Prerequisites for participation Participation is subject to confirmation of student registration for the course Advanced knowledge of Animal Science at the Master degree level				
3	Learning outcomes After the completion of this course, the Students will be able to: a) Understand the different Advances in Livestock Science specific to area of need b) Write reports				
4	Subject aims/Course Contents Special study in an identified area of animal science not treated in other courses. Recent advances and new research techniques will be discussed. This should be arranged with individual staff members prior to registration. Requires programme leader approval. Supervised individual research projects. Written reports required. The course				

	will usually be taken in specific area of need so identified as weak area of the student.
5	Teaching methods Lectures, term papers and individual presentations, and discussions
6	Assessment methods Individual Presentations, Continuous Assessment, Summative Assessment, Written end-of-the-semester examination Continuous Assessment Tests (20%), Assignment (30%) and Examination (50%)
7	This module is used in the following degree programmes as well Module is not available in any other programme in the University
8	Responsibility for module All members of the faculty
9	Other information References www.wpsa.com , www.bsas.org.uk . www.poultryscience.org , https://academic.oup.com/jas a)
	This course is a 2-unit course based on the credit system in use in Nigeria. It is delivered through 40 hours of class lectures and demonstrations. Students are however, expected to devote about 120 hours to learning of the course content, including participation in 40 hours of course lectures and demonstrations, and 120 hours of self-study (assigned reading, personal studies, assignments and group work) Hence, the course is of 4.0 ECTS credit equivalent.

Stock Improvement

Module Code 911	CRP	Student workload 120 hours	Credits (according to ECTS) 4.0	Semester Second Semester	Frequency Once every academic session	Duration 15 Weeks
1	Types of courses Theory with Field Practical and Class Presentations		Contact hours 40 hours	Independent study 120 hours	Class size Avg of 6 (Max 15)	
2	Prerequisites for participation Basic knowledge of plant systematics					
3	Learning outcomes Upon a successful completion of this course; Students will be expected to gain a working knowledge of the identification and classification of economic traits, Know breeding plan and establishment of foundation stock					
4	Subject aims/Content This course is designed to give students a strong grounding in the dynamic field of Animal Breeding Economically important traits and their intrrelationships in genetic improvement for specific (poultry, cattle, sheep and goats and horses). Objectives of breeding, breeding plans, practical selection programmes for livestock species. Establishment of foundation stock. Practicals must involve visits to breeding and livestock research enterprises.					
5	Teaching methods Class lectures, field practical/group work, assigned readings and discussions.					
6	Assessment methods Graded assignments (5-10marks), mid-semester test (15 - 20 marks), course project report and presentations based on field practical/group work (20 - 30marks) and final examination (50 marks)					
7	This module is used in the following degree programmes as well M.Agric. Animal Breeding and Genetics					
8	Responsibility for module Dr. Samuel Durosaro Dr. M. Wheto					
9	Other information					

1. References

2. Important Note

This course is a 2-unit course based on the credit system in use in Nigeria. It is delivered through 40 hours of class lectures and demonstrations. Students are however, expected to devote a total of 180 hours of learning to the course, including participation in 40 hours of course lectures and demonstrations, and 120 hours of self-study (assigned reading, personal studies, assignments, group work and hands-on practice using statistical software to analyse data). Hence, the course is of 4.0 ECTS credit equivalent.